


What Is Claimed Is:

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1. ~~A nucleic acid marker ladder consisting essentially of a restriction endonuclease digest, wherein~~
 - (a) the nucleic acid restriction endonuclease digest is a collection of nucleic acid fragments resulting from the complete digestion of one or more nucleic acids by one or more restriction endonucleases;
 - (b) the restriction endonuclease digest contains at least 3 fragments; and
 - (c) the size of the fragments in base pairs is a multiple of an integer, wherein the integer is 10 or more.
 2. The nucleic acid marker ladder according to claim 1, wherein the integer is 10.
 3. The nucleic acid marker ladder according to claim 1, wherein the integer is 25.
 4. The nucleic acid marker ladder according to claim 1, wherein the integer is 50.
 5. The nucleic acid marker ladder according to claim 1, wherein the integer is 100.
 6. The nucleic acid marker ladder according to claim 1, wherein the collection of nucleic acid fragments results from digestion of a nucleic acid ~~by one restriction endonuclease.~~

✓  ~~7. A nucleic acid marker kit comprising a carrier means having in close~~
confinement therein at least one container means where the first container
means contains a nucleic acid marker ladder consisting essentially of a
restriction endonuclease digest, wherein

(a) the nucleic acid restriction endonuclease digest is a collection
of nucleic acid fragments resulting from the complete digestion of one or
more nucleic acids by one or more restriction endonucleases;

(b) the restriction endonuclease digest contains at least 3
fragments; and

(c) the size of the fragments in base pairs is a multiple of an
integer, wherein the integer is 10 or more.

8. The nucleic acid marker kit according to claim 7, wherein the
integer is 10.

9. The nucleic acid marker kit according to claim 7, wherein the
integer is 25.

10. The nucleic acid marker kit according to claim 7, wherein the
integer is 50.

11. The nucleic acid marker kit according to claim 7, wherein the
integer is 100.

12. The nucleic acid marker kit according to claim 7, wherein the
collection of nucleic acid fragments results from digestion of a nucleic acid
by one restriction endonuclease.

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13. ~~A method of preparing a nucleic acid marker ladder comprising:~~

(a) generating at least two polymerase chain reaction (PCR) products wherein each product is generated from a template comprising a restriction endonuclease site and a primer comprising the restriction endonuclease site in the template;

(b) joining the PCR products to produce a nucleic acid molecule;
and

(c) completely digesting one or more nucleic acid molecules with at least one restriction endonuclease

wherein a nucleic acid marker ladder is produced wherein the ladder contains at least 3 fragments and the size of the fragments in base pairs is a multiple of an integer, wherein the integer is 10 or more.

14. A method of using a nucleic acid marker ladder to estimate the mass of a nucleic acid comprising:

(a) electrophoresing a known amount of the marker ladder of claim 1 and an unknown amount of said nucleic acid on an agarose gel; and

(b) comparing the mass of said marker ladder with the mass of said nucleic acid.

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